DOCUMENT RESUME

ED 452 788 HE 034 008

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TITLE Socioeconomic and Career Attainments of College Alumni with Hearing Loss: Results from a National Longitudinal Study.
PUB DATE 2001-04-00
NOTE 9p.; Paper presented at the Annual Meeting of the American Educational Research Association (Seattle, WA, April 10-14, 2001).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Alumni; *Careers; College Graduates; *Deafness; Employment Patterns; Followup Studies; *Graduate Surveys; Higher Education; Mail Surveys; *Partial Hearing; Research Methodology; *Socioeconomic Status

ABSTRACT

This paper presents key results from a four-stage 15-year followup survey of deaf and hard of hearing graduates from 47 colleges and universities. The study also discusses the strengths and weaknesses of long-term alumni surveys to document institutional accountability and the effectiveness of quantitative measures to assess graduates' occupational and career accomplishments. Responses were received from 325 alumni from the classes of 1983, 1984, and 1985 from the 47 institutions and from 240 students from the class of 1999. Eighty-five percent of 1999 survey respondents were in the work force, in contrast to 90% of college graduates without disabilities. By many criteria, the study found that a majority of the alumni from all years were successful in their socioeconomic and career accomplishments. One merit of well-designed longitudinal surveys is their capacity to assess long-term trends in the attainments of graduates. However, the longer the time since graduation, the less one is able to infer that benefits result from completing college because of extraneous factors. Unless sample sizes are sufficient, it is difficult to infer anything about a specific degree from a specific college. In addition, the quality of survey research is strongly influenced by the degree of effort put into updating mailing lists. (Contains 34 references.) (SLD)

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Socioeconomic and Career Attainments of College Alumni with Hearing Loss: Results from a National Longitudinal Study

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Presented at the meeting of the
American Educational Research Association
Seattle, WA (2001, April)

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Socioeconomic and Career Attainments of College Alumni With Hearing Loss: Results from a National Longitudinal Survey

Objectives: The purposes of this presentation are to: (a) present key results from a four-stage 15-year follow-up survey of deaf and hard of hearing graduates from 47 colleges and universities, (b) exemplify some of the strengths and weaknesses of long-term alumni surveys to document institutional accountability, and (c) demonstrate the effectiveness of quantitative measures to assess graduates' occupational and career accomplishments.

Perspectives: Passage of federal legislation such as the Rehabilitation Act of 1974 and the Americans with Disabilities Act of 1990 has prompted the nation's 5,000 colleges and universities to make their campuses and classrooms more accessible to students with disabilities. One federal survey estimated that there were 258,000 students with hearing loss enrolled at the nation's campuses in 1989-1990 (USDED, 1993). Watson and Schroedel (2000) calculated that 197,000 of these students were hard of hearing, 52,000 deafened at or after age 19, and 9,000 deafened before age 19. In contrast to the *one-time* provision of curb cuts or wider doorways for students with physical disabilities, accommodating students with hearing loss, especially those who are deaf, requires *on-going* support services (e.g., interpreters, note takers, tutors), special methods of instruction, smaller class sizes, and specialized communication devices. These expensive accommodations place a hardship on many institutions of higher education.

In response to external constituencies such as governments, parents, alumni, and other donors, colleges and universities conduct surveys of their graduates to establish the "economic pay-offs" of postsecondary training. Administrators, faculty, and support staff use the results of these surveys to modify instructional curricula, career-preparation programs, and on-campus services. Specific institutions with numerous deaf and hard of hearing alumni have conducted periodical surveys of their graduates (e.g., MacLeod-Gallinger, 1998; Olson, 1991; Rawlings, King, Skilton, & Rose, 1993; Thompson & Lucas, 1981). Whereas these studies provided evidence on the successes of their alumni, each was limited to one college. Only a few researchers have simultaneously evaluated the attainments of deaf and hard of hearing graduates from multiple colleges and universities (Crammatte, 1987; Quigley, Jenne, & Phillips; 1968; Schroedel & Watson, 1991).

In general, colleges differ in the degree to which they provide support services to students with hearing loss. Some colleges offer a comprehensive array of academic support services for a significant number of these students on campus. By contrast, other colleges provide a limited range of services to few deaf and hard of hearing students. These and other differences in the type of specific college attended (e.g., special vs. regular) significantly influence the level of acquired degree, type of occupation, and earnings of alumni (Crammatte, 1987; Schroedel & Watson, 1991).

One drawback from all of these studies is that they have gathered information from one point in time from respondents. Thus, time confounds comparisons between the results of surveys done at different points in time with different participants. Longitudinal surveys overcome many of the limitations of one-point studies. By repeated contact with one group over time, such surveys can assess progress in the *careers* of alumni and identify explicit factors contributing to long-term socio-economic attainments. A career is defined as working in a sequence of related jobs over time to accumulate advantages which enhance prospects for higher socioeconomic attainments.

Methods and Sources of the Data: Survey participants were deaf and hard of hearing graduates in the classes of 1983, 1984, and 1985 from 47 institutions of higher education in 23 states. All of these colleges provided special support services and had 15 or more students with hearing loss enrolled. They were selected from a national directory prepared by Rawlings, Karchmer, and DeCaro (1983). These alumni were surveyed by mail in 1985, 1989, 1994, and 1999. The 1985 survey was limited to graduates in the class of 1984 (Schroedel & Watson, 1991). A total of 490 alumni in the classes of 1983-1985 responded to the 1989 survey (El-Khiami, 1993). Contacts by mail and phone successfully located 400 (82%) of these 490 participants, among whom 325 (80%) completed questionnaires for the 1994 survey (Geyer & Schroedel, 1998). In preparation for the 1999 survey, 311 of the 400 (76%) respondents in the 1994 survey were successfully traced and 240 of these 311 alumni (77%) returned questionnaires after three contacts by mail and one by special telephone. Although tracing and survey response rates were reasonably high for all surveys, the number of respondents decreased from 490 in 1989 to 240 in 1999.

Adaptations were made in the Career Satisfaction Scale (Greenhaus, Parasuraman, & Wormley, 1990) and Your Prospects for Promotion instrument (Smith, Kendall, & Hulin, 1969) to account for the unique reading and cognitive styles of these students. Deaf college graduates typically have an eighth-grade reading average (Schroedel, 1982). The Socioeconomic Index (SEI) is a better measure than the U. S. Bureau of the Census three-digit codes to quantitatively assess respondents' occupations (Featherman & Hauser, 1977; Nakao & Tres, 1994; Stevens & Hyun Cho, 1985). To more accurately evaluate changes over time in the socioeconomic attainments of alumni, comparisons were limited only to respondents who participated in all surveys during 1989, 1994, and 1999.

The sample in the 1999 contained 240 residents in 39 states. Their average age was 38 and 53% were female. As for ethnic background, 93% were white and 7% were of color. The under-representation of the latter alumni reflected their chronic under-participation in postsecondary education (Schroedel & Watson,1991). Seventy-one percent identified themselves as deaf and 29% as hard of hearing. Recalling that the alumni in this study graduated from colleges that provided *programmatic* support services, the hard-of-hearing graduates were probably dissimilar compared to hard of hearing alumni from regular colleges and universities. By 1999, 28% of survey participants had earned a vocational degree, 24% an associate's degree, 32% a bachelor's degree, 15% a master's degree, and 1% a doctorate.

Results:

Labor force participation: Eighty-five percent of 1999 survey respondents were in the work force in contrast to 90% of college graduates without disabilities (Hale, Hayghe, & McNeil, 1998). Among the former, 5% were unemployed compared to 2.5% of associate's degree recipients and 1.9% of bachelor's degree recipients among workers without disabilities (U.S. Bureau of Labor Statistics, 1999). A factor contributing to the higher unemployment rate among deaf and hard of hearing college graduates is that they were three times more likely (75% vs. 24%) to acquire sub-baccalaureate degrees than their counterparts who hear (Schroedel & Watson, 1991; U.S. Bureau of the Census, 1995). Higher degree recipients are less likely to be unemployed.

Underemployment: An underemployed person is one who works in an occupation less demanding than the skill level or educational credentials usually required for that job (Clogg, 1979).

Using a degree-related definition of underemployment, we determined that 13% of alumni were underemployed in 1994 and 15% in 1999. Comparatively, 27% of the non-disabled workforce with completed college degrees were similarly underemployed (Survey of Income and Program Participation, 1993). A major source of underemployment in the latter national sample were female bachelor's degree recipients working in clerical jobs. Among deaf and hard of hearing college alumni those most at risk to underemployment were vocational degree completers. Differences between the two samples prohibit comparing the respective rates of underemployment among alumni with and without hearing loss. Schroedel and Watson (1991) found an upward socioeconomic response bias in the1985 stage of the survey which probably extended into later stages of data collection. In effect this means that the prevalence of underemployment in the 1994 and 1999 samples was under-estimated.

Occupational attainments: Most respondents in 1999 were well established in their jobs: their average tenure on their current job was between 4-5 years and 24% had the same job for 9-plus years. The 195 employed alumni in 1999 worked in 70 different occupations. Overall, there was much less occupational clustering, a factor which limits upward career mobility, than reported in studies of deaf workers without a college education (Barnartt, 1985; Terzian & Saari, 1982). These results imply that access to broader career training options expands employment opportunities and subsequently reduces occupational segregation. The mean SEI score for respondents' occupation in 1994 was similar to the average SEI scores for other samples of their similarly educated deaf peers, but lower than the socioeconomic quality of the occupations held by comparably educated workers who hear (Geyer & Schroedel, 1998; Schroedel, 1987; Schroedel & Watson, 1991). This implies that these workers with hearing loss are not converting their educational attainments into occupational attainments as equally well as their counterparts who hear in the general workforce. The lower academic achievement, especially with English skills, is a primary factor in this pattern (Schroedel, 1982; Schroedel & Geyer, in press).

Trends in educational and occupational attainments: Between 1983-85 and 1999 more alumni completed master's degrees and entered professional, managerial, and technical occupations. However, in 1999 there was a larger percentage of males over females in these occupations. This reversed a trend since 1985 in which females in this study predominated in these occupations (El-Khiami, 1993; Schroedel, Geyer, & Mc Gee, 1996; Schroedel & Watson, 1991).

Economic attainments: The annual 1998 earnings of alumni were strongly influenced by the level of completed degree: vocational degrees ($15,000-$19,999), associate's degrees ($25,000-$29,999), bachelor's degrees ($20,000-$24,999), and master's or doctorate degrees ($35,000-$39,999). However, these alumni at all degree levels earned less than college graduates who hear: associate's degrees ($31,700), bachelor's degrees ($40,100), and master's degrees ($50,000) (U.S. Bureau of Labor Statistics, 1999). Why did deaf and hard of hearing recipients with associate's degrees earn more than their peers with bachelor's degrees? Although there was not any significant difference in the proportion of males and females among these degree recipients, gender did influence this disparity in earnings. This discrepancy is primarily rooted in the long-term effects of gender patterns in choice of college majors (Fisher, Harlow, & Moores, 1974; MacLeod-Gallinger, 1992; Schroedel, 1986; Schroedel & Watson, 1991). In short, males are more likely than females to be trained in scientific and technical fields leading to higher-paying jobs.

Between 1988 and 1998 males made consistent and larger gains in income than their female

counterparts. The 30% gap in earnings favoring deaf males over deaf females has been documented since the 1960s and persists into the 1990s (Schroedel, et al., 1996). This pattern continues despite the fact that females were more likely to acquire higher degrees than their male counterparts (Schroedel, et al., 1996; Schroedel & Watson, 1991).

Getting promotions: Forty-five percent of alumni had obtained promotions between 1995 and 1999 in contrast to 48% between 1989 and 1994. Significant factors inducing promotability since 1994 were: (a) either changing employers or obtaining promotions and transfers with the same employer, (b) longer work tenure with the same employer, (c) working full-time rather than part-time, and (d) increased requests for workplace accommodations (Schroedel & Geyer, in press). However, if accommodations preceded promotions or vice versa is not clear. Less statistically significant, but otherwise informative indicators of gaining promotions were: (a) having a mentor, (b) being younger in age (e.g., 34-38), (c) working in white-collar rather than blue-collar jobs, and (d) being employed in private industry or government rather than in schools or service agencies for deaf persons.

Other career attainments: As measured by Likert-type scales, respondents had positive attitudes towards their prospects for promotions and their careers. Furthermore, those who were more frequently promoted had more favorable attitudes towards their prospects for promotion than those promoted less often. Seven variables accounted for 58% of the variance in job satisfaction: the most significant being a supportive supervisor and high-quality on-the-job communication, followed by levels of degree, work performance, and income, along with intentions to stay on the job and availability of a retirement plan (Geyer & Schroedel, 2001). Job satisfaction in turn, is a significant predictor of job-search intentions.

Importance of the Study: By numerous criteria this study found that a majority of these alumni were successful in their socioeconomic and career accomplishments. One merit of well-designed longitudinal surveys is their capacity to assess long-term trends in the attainments of graduates. The validity of surveying the career success of a given group of college-educated workers (such as those with the shared attribute of loss of hearing) is enhanced by inclusion of alumni from multiple colleges and universities.

However, there are two broad disadvantages to this type of study. First, the longer the period since graduation, the less one is able to infer benefits directly due to completing college, because extraneous variables intrude upon subsequent employment and economic achievements. Second, unless sample sizes are sufficient, utilizing graduates from multiple colleges limits what may be inferred from earning a degree from a specific college. This lessens the value of such research for purposes of institutional accountability. The ideal type of survey to assess institutional effectiveness is a longitudinal follow-up of the same cohort of graduates from one college or university.

Furthermore, the quality of survey research is strongly influenced by the degree of effort put into updating mail lists which are essential to enhance response rates. Funds spent in tracking down hard-to-locate graduates to reduce sample attrition are a good investment. Use of an obsolete address list can reduce the rate of survey response by as much as 22 percentage points (Schroedel, 1984). Finally, persons who desire more information about the measures of occupational and career success used in this study are welcome to contact the lead presenter.

References

Barnartt, S. N. (1985). *The effects of education of deaf American workers' occupational statuses and incomes*. Paper presented at the International Congress on Education of the Deaf, Manchester, England.

Clogg, C. C. (1979). *Measuring underemployment: Demographic indicators in the United States*. New York: Academic Press.

Crammatte, A. B. (1987). *Meeting the challenge: Hearing-impaired professionals in the workplace*. Washington, DC: Gallaudet University Press.

El-Khiami, A. (1993). Employment transitions and establishing careers by postsecondary alumni with hearing loss. *The Volta Review, 95*(4), 357-366.

Featherman, D. L., & Hauser, R. M. (1978). *Opportunity and change*. New York, NY: Academic Press.

Fisher, S.D., Harlow, M. J. P., & Moores, D.F. (1974). *Postsecondary programs for the deaf: External view* (Report of USOE/BEH grant No. OE 09-332189-45033-032). St Paul, MN: University of Minnesota, Center in Education of Handicapped Children (Monograph 2 of 6; Report No. 61). (ERIC Document Reproduction Service No. ED 106 999).

Geyer, P. D., & Schroedel, J. G. (1998). Conditions influencing the availability of accommodations for workers who are deaf or hard-of-hearing. *Journal of Rehabilitation, 65*(2), 42-50.

Geyer, P. D., & Schroedel, J. G. (2001). *Influences on job satisfaction for full-time workers with hearing loss*. Little Rock, AR: University of Arkansas, Rehabilitation Research and Training Center for Persons who are Deaf and Hard of Hearing. Manuscript in preparation.

Greenhaus, J. H., Parasuraman, S., & Wormley, W. M. (1990). Effects of race on organizational experiences, job performance, evaluations, and career outcomes. *Academy of Management Journal, 33*(1), 64-86.

Hale, T. W., Hayghe, H. V., & McNeil, J. M. (1998). Persons with disabilities: Labor market activity, 1994. *Monthly Labor Review, 121*(9), 3-12.

Lewis, L., & Farris, E. (1994). *Deaf and hard of hearing students in postsecondary education* (National Center for Education Statistics Report NCES 94-394). Washington, DC: U.S. Government Printing Office.

MacLeod-Gallinger, J. E. (1992). The career status of deaf women: A comparative look. *American Annals of the Deaf, 137*(4), 315-325.

MacLeod-Gallinger, J. E. (1998). *NTID/RIT alumni follow-up 1996 technical report*. Rochester, NY: Rochester Institute of Technology; National Technical Institute for the Deaf; Center for Research, Teaching, and Learning; Department of Educational and Career Research.

Nakao, K., & Tres, J. Updating occupational prestige and socioeconomic scores: How the new measures measure up. In P. V. Marsden (Ed.), *Sociological methodology* (Vol. 24, pp. 1-72). Cambridge, MA: Blackwell Publishers.

Olson, R. C. (1991). *Yes, deaf students seek advanced training, graduate, and work*. Council Bluffs, IA: Iowa Western Community College.

Quigley, S. P., Jenne, W. C., & Phillips, S. B. (1968). *Deaf students in colleges and universities*. Washington, DC: Alexander Graham Bell Association for the Deaf.

Rawlings, B. R., Karchmer, M. J., & DeCaro, J. J. (1983). *College and career programs for deaf students*. Washington, DC and Rochester, NY: Gallaudet College and Rochester Institute of Technology; National Technical Institute for the Deaf.

Rawlings, B. R., King, S. J., Skilton, J. C.,& Rose, D.B. (1993). *Gallaudet University alumni survey, 1993*. Washington, DC: Gallaudet University, Research Institute and Office of Institutional Research.

Schroedel, J. G. (1982, March). *Socioeconomic attainments of technical college graduates who are deaf*. Paper presented at the meeting of the District of Columbia Sociological Society, Washington, DC.

Schroedel, J. G. (1984). Analyzing surveys of deaf adults: Implications for survey research on persons with disabilities. *Social Science and Medicine, 19*(6), 619-627.

Schroedel, J. G. (1986). A national study of the class of 1984 in postsecondary with implications for rehabilitation. In D. Watson, G. Anderson, & M. Taff-Watson (Eds.), *Integrating human resources, technology, and systems in deafness*. Silver Spring, MD: American Deafness and Rehabilitation Association Monograph No. 13.

Schroedel, J. G. (1987). Predictors of socioeconomic status. In A. B. Crammatte (Ed.), *Meeting the challenge: Hearing-impaired professionals in the workplace* (pp. 93-138). Washington, DC: Gallaudet University Press.

Schroedel, J. G., & Geyer, P. D. (in press). Enhancing the career advancement of workers with hearing loss: Results from a national follow-up survey. *Journal of Applied Rehabilitation Counseling*.

Schroedel, J. G., Geyer, P. D., & McGee, S.K. (1996). Career success of deaf and hard of hearing

graduates: Preliminary findings of a ten-year study. In M. Kolvitz (Ed.), *Challenge of change: Beyond the horizon – conference proceedings*. Knoxville, TN: University of Tennessee, Postsecondary Education Consortium.

Schroedel, J. G., & Watson. D. (1991). *Enhancing opportunities in postsecondary education for deaf students* (Final Report of USDED/OSERS/NIDRR grants G008300153 and G0086C3501). Little Rock, AR: University of Arkansas, Rehabilitation Research and Training Center on Deafness and Hearing Impairment.

Smith, P. C., Kendall, L. M., & Hulin, C. L. (1969). *The measurement of satisfaction in work and retirement*. Chicago, IL: Rand-McNally.

Stevens, G., Hyun Cho, J. Socioeconomic indexes and the new 1980 census occupational classification scheme. *Social Science Research, 14*, 142-168.

Survey of Income and Program Participation [Second-wave interview data tape]. (June-September, 1993). Upper Marlboro, MD: U. S. Bureau of the Census [Producer and Distributor].

Terzian, A. L., & Saari, M. E. (1982). *Employment and related life experiences of deaf persons in New Jersey*. New Brunswick, NJ: Rutgers University, Institute of Management and Labor Relations.

Thompson, T. L., & Lucas, J. A. (1981). *Follow-up study of former hearing-impaired students at Harper College, 1977-1980*. Palatine, IL: W. Rainey Harper College, Department of Disabled Student Services and Office of Planning and Research.

U. S. Bureau of the Census. (1995). *Statistical abstract of the United States: 1995* (115th ed.). Washington, DC: U.S. Government Printing Office.

U. S. Bureau of Labor Statistics. (1999). More education: Higher earnings, lower unemployment. *Occupational Outlook Quarterly, 43*(3), 40.

U. S. Department of Education, National Center for Education Statistics. (1993). *1989-90 National Postsecondary Education Student Aid Study* [Electronic data tape]. Cited by Lewis & Farris (1994).

Watson, D., & Schroedel, J. G. (2000, February). *Analyses of national databases on deaf and hard of hearing students in 5,000 colleges in the United States*. Paper presented at the Postsecondary Education Programs Network (PEPNet) research focus group forum, Los Angeles, CA.